

absorb salts. The former bears salt in much higher concentration than in the latter, owing to excretion of carbon dioxide and probably owing to the presence of mineral acids freed because of the absorption of cations of salts<sup>34</sup> by the gels of the walls of the root hairs and epidermal cells.—WM. CROCKER.

**Vegetation of an atoll.**—KOIDZUMI<sup>35</sup> has visited and described the vegetation of an oceanic coral island lying in longitude 169° 5 E. and latitude 6° N., contrasting the luxuriance of its vegetation with the poorness of its flora. The greater part of this atoll is covered with a luxuriant strand forest in which the cocoanut is prominent. This is a response to a mean temperature of 27° C., and an annual rainfall of 450 cm. Of its 59 species, 40 seem to have reached the island by natural means. The largest families are the Gramineae (6 spp.), Euphorbiaceae (5 spp.), and the Leguminosae (4 spp.), their small representation also pointing to the conclusion that the flora is altogether derivative and of comparatively recent origin.—GEO. D. FULLER.

**Parasitism of *Comandra umbellata*.**—Investigating the conditions of growth of *Comandra umbellata*, because of its importance as one of the hosts of the heteroecious rust *Peridermium pyriforme*, so injurious to various pines, HEDGCOCK<sup>36</sup> found that in nature the plant is always a partial parasite, being united to its host by its roots and apparently most dependent in regard to its water supply. Fifty different hosts, scattered through various plant families from the Gramineae to the Compositae, are listed. Proof is cited that *Comandra* can live without parasitism, and that its seeds may germinate without the presence of the roots of host plants, although it is doubtful if it ever does either in nature.—GEO. D. FULLER.

**Anatomy of *Nephrolepis volubilis*.**—SAHNI<sup>37</sup> has investigated the anatomy of this climbing Malayan fern. It is remarkable for its extremely long stolons, which scale forest trees up to 16 m., and enable the "lateral" plants borne on them at intervals to reach far above the mother plant, which is rooted in the soil. These lateral plants have no roots, and put out coiled tendril-like stolons that show contact irritability. The vascular cylinder of the stolons is an exarch protostele, and when a stolon branches, the two steles run parallel to each other for some distance, inclosed in the cortical envelope, before they become free. It is a case in which a soil-rooted plant gives rise through stolons to an epiphytic progeny.—J. M. C.

<sup>34</sup> CZAPEK, F., Jahrb. Wiss. Bot. 56:97-98. 1915.

<sup>35</sup> KOIDZUMI, GENICHI, The vegetation of Jaluit Island. Bot. Mag. Tokyo 29:242-257. figs. 3. 1915.

<sup>36</sup> HEDGCOCK, G. G., Parasitism of *Comandra umbellata*. Jour. Agric. Research 5:133-135. 1915.

<sup>37</sup> SAHNI, BIRBAL, The anatomy of *Nephrolepis volubilis* J. Sm., with remarks on the biology and morphology of the genus. New Phytol. 14:251-274. pl. 4. figs. 7. 1915.